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EXAMINER	
OREILLY, PATRICK F	
ART UNIT	PAPER NUMBER
3749	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,001	ELMERS ET AL.	
	Examiner	Art Unit	
	Patrick F. O'Reilly III	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 11-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 February 2010* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/16/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to applicant's Request for Continued Examination (RCE) received on March 23, 2010.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on February 16, 2010 is acknowledged. The submission is in compliance with the provisions of 37 C.F.R. § 1.97 and 37 CFR § 1.98 and, therefore, the references therein have been considered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, new claims 13 and 14 recite the following limitation: "wherein, when heating is required in the passenger cabin, the first temperature is *always* higher than the second temperature" (emphasis added). The originally-filed specification does not provide support for the first temperature *always* being higher than the second temperature when heating is required in the passenger cabin of the aircraft. Rather, the original disclosure merely provides the following description regarding the heating mode: "In the case of a necessary heating of the

cabin a similar procedure is *preferably* adopted: in order not to subject the passengers directly to a relatively hot stream of air, under these conditions somewhat hotter air is *preferably* blown into the cabin at sites remote from passengers than at sites closer to passengers (emphasis added)." Refer to the Amendments to the Specification dated September 18, 2009, page 4, paragraph [0008]. Therefore, at best, the originally-filed disclosure of this application only provides support for the following: "wherein, when heating is required in the passenger cabin, the first temperature *is* higher than the second temperature."

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-3** are rejected under 35 U.S.C. 102(b) as being anticipated by Otterson (US 2,181,199). The specification and the drawings in the Otterson reference disclose all of the elements recited in **claims 1-3** of this application.

7. Specifically, in regard to claim 1, the Otterson reference discloses all of the claimed elements, including: introducing air at a first temperature into the passenger cabin (12) at first sites remote from passengers (e.g., in the upper region of the aircraft cabin 12, the air being delivered by means of cool air supply conduits 63); and, introducing air at a second temperature into the passenger cabin (12) at second sites closer to passengers than the first sites (e.g., at the floor 14 of the aircraft cabin 12, the air being delivered by means of warm air supply conduit 25), wherein, cooling is required in the passenger cabin (12), the first temperature is lower than the

second temperature (the air distributed by the cool air supply conduits 63 is cool ambient air, whereas the air supplied by warm air supply conduit 25 is air that has been heated by heater 33). Refer to Otterson, Figures 1-2; page 3, right-hand column, lines 60-75; and page 4, left-hand column, lines 1-75, right-hand column, lines 1-62. Therefore, because all of the elements in claim 1 of this application are disclosed by the Otterson reference, this claim is rejected in accordance with 35 U.S.C. 102(b).

8. In regard to claim 2, Otterson further discloses that the second sites (to which warm air is delivered by warm air supply conduit 25) are located nearer to a floor (14) of the passenger cabin (12) than the first sites (in the upper region of the aircraft cabin 12, the air being delivered by means of cool air supply conduits 63). See Otterson, Figures 1-2; page 3, right-hand column, lines 60-68; and page 4, left-hand column, lines 63-66. Thus, Otterson meets the language of this claim.

9. In regard to claim 3, Otterson further discloses that the second sites (to which warm air is delivered by warm air supply conduit 25) are located on the floor (14) of the passenger cabin (12) and the first sites (to which cool air is delivered by means of cool air supply conduits 63) are located in an upper region (see Fig,. 2) of the passenger cabin (12). Refer to Otterson, Figures 1-2; page 3, right-hand column, lines 60-68; and page 4, left-hand column, lines 63-66. Consequently, the Otterson reference also meets the language set forth in claim 3.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

> such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. **Claims 4-9 and 11-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Otterson (US 2,181,199) in view of Scheffler et al. (US 6,306,032). These two references, when considered together, teach all of the elements recited in **claims 4-9 and 11-14** of this application.

12. In particular, claims 4, 5, and 13 of this application are obvious when Otterson is viewed in light of Scheffler et al. As described above, Otterson discloses all the elements of base claim 1, the claim upon which these claims depend, either directly or indirectly. Moreover, with respect to claim 4, Otterson further discloses that air introduced into the passenger cabin (12) at the first and second sites (by means of cool air supply conduits 63 and warm air supply conduit 25, respectively) is fresh air (the cool air supply conduits 63 and the warm air supply conduit 25 are both supplied with fresh, ambient air via external air conduit 28), and that the air introduced into the passenger cabin (12) at the second site is temperature-controlled fresh air (the air delivered by warm air supply conduit 25 is heated by heater 33). Refer to Otterson, Figure 1; page 3, right-hand column, lines 60-75; and page 4, left-hand column, lines 1-28 and 63-75, right-hand column, lines 1-3. However, claims 4 and 5 of this application further disclose that the air introduced into the passenger cabin at the first site is also temperature-controlled fresh air, and that the air introduced into the passenger cabin at both sites contains engine bleed air and recirculated air. Moreover, claim 13 of this application further discloses that, when heating is required in the passenger cabin, the first temperature is always higher than the second temperature. Otterson does not contain these additional limitations. Scheffler et al., although, teaches an air-conditioning system for a plurality of zones (e.g., freight hold space 4, sleeping cabin 17, sleeping cabin 18) within an aircraft, having a first line branching (first supply air line

31) that is connected to both a feed line (discharge line connected to air mixer unit 1) for temperature-controlled fresh/recirculated air and a feed line (first trimming air line 71) for hot engine bleed air, and a second line branching (second supply air line 32) that is connected to both a feed line (discharge line connected to air mixer unit 1) for temperature-controlled fresh/recirculated air and a feed line (first trimming air line 72) for hot engine bleed air so that the temperature of the supply air can be adjusted after it leaves the air mixer unit (1) and energy can be conserved by utilizing previously conditioned recirculated air. Refer to Scheffler et al., Figure 2; column 4, lines 34-63; and column 9, lines 15-34. Therefore, when Otterson is viewed in light of Scheffler et al., it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the aircraft passenger cabin air supply system/method of Otterson by replacing the steam-based heating system with a hot engine bleed air system fluidly connected to both the floor air supply conduit (25) and ceiling air supply conduits (63), and by reconfiguring the recirculation air system disclosed therein such that a mixture of fresh, recirculated, and engine bleed air is able to be supplied to the aircraft cabin (12), as taught by Scheffler et al., in order to enable the temperature of the air delivered by cool air supply conduits (63) to be controlled, as well as to enable energy to be conserved by utilizing previously conditioned recirculated air.

With respect to claim 13, when the aircraft passenger cabin air supply system/method of Otterson is modified in the manner described above, the resulting modified ceiling air supply conduits (63) would inherently have the ability to deliver air at a first temperature that is higher than that of air delivered at a second temperature by floor air supply conduit (25), during a time which heating is required in the passenger cabin (12), because the temperature of the air in both

the ceiling air supply conduits (63) and the floor air supply conduit (25) could be readily altered by varying the quantity of engine bleed air supplied thereto.

13. Moreover, claim 6 of this application is obvious when Otterson is viewed in light of Scheffler et al. Otterson discloses the invention substantially as claimed, including: at least a first line branching (e.g., cool air supply conduits 63) that leads to a first region (e.g., an upper region) of the passenger cabin (12) remote from passengers, the first line branching (63) delivering air at a first temperature to the passenger cabin (12); and at least a second line branching (warm air supply conduit 25) that leads to a second region (the floor 14) of the passenger cabin (12), said second region (14) being closer to passengers than said first region (upper region), the second line branching (25) delivering air at a second temperature to the passenger cabin (12); wherein, when cooling is required, the first temperature is lower than the second temperature (the air distributed by the cool air supply conduits 63 is cool ambient air, whereas the air supplied by warm air supply conduit 25 is air that has been heated by heater 33). Refer to Otterson, Figures 1-2; page 3, right-hand column, lines 60-75; and page 4, left-hand column, lines 1-75, right-hand column, lines 1-62.

However, claim 6 of this application further discloses that the first and second line branching delivers a first and second air mixture, respectively, a first valve is coupled with the first line branching and is operable to control the first temperature by modifying an amount of hot bleed air added to the first air mixture; and a second valve is coupled with the second line branching and is operable to control the second temperature by modifying an amount of hot bleed air added to the second air mixture. Otterson does not contain these additional limitations.

Scheffler et al., although, teaches an air-conditioning system for a plurality of zones (e.g., stairwell 5, freight hold space 4, sleeping cabin 17, sleeping cabin 18) within an aircraft, having a first line branching (first supply air line 31) that leads to a first region (e.g., sleeping cabin 17, sleeping cabin 18, and freight hold space 4) of the passenger cabin, the first line branching (31) delivering a first air mixture (a first mixture of temperature-controlled fresh/recirculated air from air mixer unit 1 and hot engine bleed air from trim air unit 7A) at a first temperature to the passenger cabin, a second line branching (second supply air line 32) that leads to a second region (e.g., stairwell 5) of the passenger cabin, the second line branching (32) delivering a second air mixture (a second mixture of temperature-controlled fresh/recirculated air from air mixer unit 1 and hot engine bleed air from trim air unit 7A) at a second temperature to the passenger cabin; a first valve (e.g., first trimming air regulation valve TV1) coupled with the first line branching (31) via first trimming air line (71) and operable to control the first temperature by modifying an amount of hot bleed air added to the first air mixture; and a second valve (e.g., second trimming air regulation valve TV2) coupled with the second line branching (32) and operable to control the second temperature by modifying an amount of hot bleed air added to the second air mixture so that the temperature of the first and second air mixtures air can be adjusted after they leave the air mixer unit (1) and energy can be conserved by utilizing previously conditioned recirculated air. See Scheffler et al., Figure 2; column 4, lines 34-63; and column 9, lines 15-34. Therefore, when Otterson is viewed in light of Scheffler et al., it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the aircraft passenger cabin air supply system of Otterson by replacing the steam-based heating system with a hot engine bleed air system fluidly connected to both the floor air supply conduit (25) and ceiling air supply

conduits (63), by reconfiguring the recirculation air system disclosed therein such that a mixture of fresh, recirculated, and engine bleed air is able to be supplied to the aircraft cabin (12) by conduits (25, 63), and by adding first and second valves (TV1, TV2) operably coupled to the conduits (25, 63) so as to control the temperature of the air mixture in each by modifying the amount of hot engine bleed air added thereto, as taught by Scheffler et al., in order to enable the temperature of the air delivered by both line branches (25, 63) to be selectively controlled using a simpler, air-based temperature-regulating means, as well as to enable energy to be conserved by utilizing previously conditioned recirculated air.

14. In regard to claim 7, Otterson further discloses that the first region of the passenger cabin (12) is an upper region of the passenger cabin (12), and the second region of the passenger cabin (12) is a floor region of the passenger cabin (12). Refer to Otterson, Figures 1-2; page 3, right-hand column, lines 60-68; and page 4, left-hand column, lines 63-66. Therefore, Otterson in view of Scheffler et al. also renders the limitations set forth in this claim obvious.

15. In regard to claim 8, the modified aircraft passenger cabin air supply system of Otterson further teaches that the first line branching (e.g., cool air supply conduits 63) is connected to at least one feed line for temperature-controlled fresh air and recirculated air, and to at least one feed line for hot engine bleed air. See Otterson, Figure 1; also see Scheffler et al., Figure 2. Consequently, Otterson in view of Scheffler et al. also renders the limitations set forth in claim 8 obvious.

16. In regard to claim 9, the modified aircraft passenger cabin air supply system of Otterson further teaches that the second line branching (warm air supply conduit 25) is connected to at least one feed line for temperature-controlled fresh air and recirculated air, and to at least one

feed line for hot engine bleed air. See Otterson, Figure 1; also see Scheffler et al., Figure 2. Consequently, Otterson in view of Scheffler et al. also renders the limitations set forth in claim 9 obvious.

17. In regard to claims 11 and 12, Scheffler et al. further teaches that the first line branching (first supply air line 31) and the second line branching (second supply air line 32) disclosed therein are coupled to at least one feed line for hot engine bleed air (e.g., first and second air trimming lines 71, 72) at the respective first and second valves (first and second trimming air regulation valves TV1, TV2), said first and second valves (TV1, TV2) adjusting the amount of hot engine bleed air delivered to the first and second line branching (31, 32) according to temperature measurements of the passenger cabin (e.g., as determined temperature sensors RF-21, RF-22, and RF-1) outputted to a temperature control unit (zone regulating unit KC) for the purpose of enhancing the comfort of the passengers in the passenger cabin by enabling the cabin to be controlled to a desired temperature. Refer to Scheffler et al., Figure 2; column 7, lines 52-67; and column 8, lines 1-54. Therefore, when Otterson is viewed in light of Scheffler et al., it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the aircraft passenger cabin air supply system/method of Otterson in view of Scheffler et al. by coupling the cool air supply conduits (63) at the first sites and the warm air supply conduit (25) at the second sites to respective feed lines (71, 72) for hot engine bleed air at the respective first and second valves (TV1, TV2), the first and second valves (TV1, TV2) adjusting the amount of hot engine bleed air delivered to the first and second line branching (63, 25) according to temperature measurements of the passenger cabin outputted to a temperature control unit (KC), as taught by Scheffler et al., in order to enhance the comfort of

the passengers in the passenger cabin by enabling the cabin to be controlled to a desired temperature.

18. In regard to claim 14, when the aircraft passenger cabin air supply system/method of Otterson is modified in the manner described above, the resulting modified ceiling air supply conduits (63) would inherently have the ability to deliver air at a first temperature that is higher than that of air delivered at a second temperature by floor air supply conduit (25), during a time which heating is required in the passenger cabin (12), because the temperature of the air in both the ceiling air supply conduits (63) and the floor air supply conduit (25) could be readily altered by varying the quantity of engine bleed air supplied thereto. Refer to the rejection for claim 6 provided above. Thus, Otterson in view of Scheffler et al. also renders the limitations set forth in claim 14 obvious.

Response to Arguments

19. Applicant's arguments with respect to pending claims 1-9 and 11-14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

20. See attached form PTO-892 for additional pertinent prior art, which was not directly relied upon in this action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick F. O'Reilly III whose telephone number is (571) 272-3424. The examiner can normally be reached on Monday through Friday, 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven B. McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick F. O'Reilly III/
Examiner, Art Unit 3749

/Steven B. McAllister/
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